

REMARKS

Applicant has carefully reviewed the Official Action dated January 8, 2010 for the above identified patent application.

At page 2, paragraph 3 of the Official Action, claims 22 and 23 have been rejected under 35 U.S.C. Section 112, second paragraph, as being indefinite. The basis for the formal grounds of rejection of dependent claims 22 and 23 is that parent independent claim 1 and 11, respectively, do not support the limitation of controlling the power consumption of each sub-process, as recited in dependent claims 22 and 23. Although not specifically referred to in the Official Action, this formal ground of rejection would also apply to dependent claims 3 and 13.

In response to this formal ground of rejection, independent claims 1 and 11 have been amended to recite "such that total power consumption of each said sub-process is controlled". This recitation was deleted from independent claims 1 and 11 in the Amendment filed on September 24, 2009. The re-instatement of this recitation to independent claims 1 and 11 will overcome the formal grounds of rejection raised against dependent claims 22 and 23 in the Official Action, and also expressly support the recitations in dependent claims 3 and 13.

The form of independent claims 1 and 11 have also been revised to delete the term "and/or" to more clearly define nature of the claimed invention, and to replace the recitation "adjusting flush power at least partly as a function of hole depth" with the recitation "adjusting flush power directly in dependence on a value representing hole depth", also for more clearly

defining the nature of the invention. The latter revision to independent claims 1 and 11 is supported by the original disclosure of this patent application, at, for example, page 4, lines 3 – 27; and page 7, lines 13 – 19 of the original Specification. The form of dependent claims 24 and 25 have been revised to conform to the revisions to parent independent claims 1 and 11, respectively.

The recitation in independent claims 1 and 11, “adjusting flush power at least partly...” has been replaced with the recitation “adjusting flush power directly...” to more clearly define the nature of the claimed invention. At page 5, paragraph 8 of the Official Action dated January 8, 2010, the Examiner states, in pertinent part, “...that Hobhouse teaches flush power is adjusted indirectly (“at least partly”) as a function of hole depth.” During a telephone interview with the Examiner on May 27, 2010, as discussed below, the Examiner suggested deleting the recitation “at least partly” to further distinguish the claims over Hobhouse. At that time, the undersigned declined to make this revision to the independent claims because, in the opinion of the undersigned, such revision might have resulted in an unduly limited interpretation of the scope of the independent claims. Upon further consideration, the expression “adjusting flush power directly in dependence on a value representing hole depth” more clearly defines the nature of the independent claims, addresses the Examiner’s concerns at page 5, paragraph 8 of the Official Action, and more clearly distinguishes the independent claims over the Hobhouse patent.

On May 27, 2010, the undersigned Attorney for Applicant conducted a telephone interview with Examiners Sean D. Andrish and William P. Neuder to discuss this patent application, and in particular, the Official Action dated January 8, 2010. In that Official Action, independent claims 1 and 11 were rejected under 35 U.S.C. Section 102(b) as being anticipated by the Hobhouse patent (U.S. Patent No. 3, 550, 697).

During the course of the telephone interview, the undersigned submitted that independent claims 1 and 11 recite that the total power consumption of each sub-process is controlled thereby enabling power consumption all of the sub-processes to be controlled. As discussed in Applicant's Specification, this feature of the invention enables, among other things, reduction of power in one sub-process which can be used to increase power of another sub-process, without exceeding a total power consumption level, resulting in use of less power which would otherwise be consumed, and consequently less fuel consumption, less noise, and less heat (Applicant's Specification, page 3, lines 17 – 29). Contrary to the invention disclosed and claimed by Applicant in independent claim 1 and 11, the Hobhouse patent is not concerned with control of power consumption, but is directed to drilling problems relating to varying rock properties, as for example, when a drill bit moves into different strata during a drilling process (column 1, lines 12 – 15 and lines 35 – 43; and column 2, lines 67 through column 3, lines 14 of the Hobhouse Specification). The Hobhouse patent does not address controlling total power consumption of each of the individual sub-processes, and does not address controlling total

power consumption of all of the individual sub-processes. On the contrary, the Hobhouse patent controls power based upon changing rock properties, which determine the extent to which it is possible to meet power demands, thereby requiring an oversized power supply. Applicant's method and system defined by independent claims 1 and 11, by controlling the total of power consumption of each of the sub-processes, enables total power consumption of all sub-processes to be controlled. The Hobhouse patent does not teach or suggest controlling the total power consumption of each sub-process or all of the sub-processes. In fact, the one time that a main power supply (the prime mover) is mentioned in the Hobhouse Specification (column 8, line 1), there is no mention of providing control of the prime mover, and thus the Hobhouse patent provides full (uncontrolled) power consumption to all sub-processes.

Examiners Andrish and Neuder agreed with this line of argument, but indicated that independent claims 1 and 11 did not expressly recite that the total power consumption of the sub-processes is controlled as a result of the "and/or" limitation in the claims. The Examiners agreed that revising the independent claims to recite "...controlling the flush power and at least one of the percussion power and the rotational power..." would properly claim that the total power consumption of each said sub-process is controlled, and distinguish the independent claims over the Hobhouse patent.

During the course of the telephone interview, the undersigned also argued that the recitation in independent claims 1 and 11, that the flush power is adjusted at least partly in dependence on a value representing hole depth, also distinguishes the claim from the

Hobhouse patent. Specifically, the Hobhouse patent discloses and advocates adjusting parameters, and in particular weight on a bit, based upon changes in the strata being drilled, and changes in bit condition (see, column 1, lines 12 – 15 and lines 35 – 40 of the Hobhouse Specification). Since different strata can be encountered at different depths, any adjustments, including adjustments to flush power, are independent of hole depth, since the adjustments can increase or decrease power based upon different strata encountered, independent of hole depth.

Examiner Andrish pointed out that column 2, lines 49 – 50 of the Hobhouse Specification refers to compensation “...for change in depth of drilling, ...”. However, the undersigned noted that the reference to “change in depth of drilling” is prefaced with the qualification “...subsequent changes indicating strata alterations when compensated for change of depth of drilling, ...” (emphasis added).

In view of the above, the undersigned proposed to revise independent claims 1 and 11 to recite “adjusting flush power in dependence on a value representing hole depth, without regard to the strata being drilled, ...” (emphasis added). Examiner Andrish agreed that this revision to independent claims 1 and 11 would further distinguish the claims over the Hobhouse patent.

During the telephone interview, Examiner Andrish suggested revising independent claims 1 and 11 to delete the recitation “at least partly” for the reasons discussed at page 5,

paragraph 8 of the Official Action dated January 8, 2010. At that time, the undersigned believed that the proposed revisions to independent claims 1 and 11 (“without regard to the strata being drilled”) would patentably distinguish the independent claims over Hobhouse, and therefore it was not necessary to delete “at least partly” from the claims. However, upon further consideration, the proposed revision to independent claims 1 and 11, that flush power is adjusted in dependence on a value representing hole depth, “without regard to the strata being drilled”, might not accurately define the invention under all situations. Therefore, Applicant has declined to revise independent claims 1 and 11 to include this limitation. Instead, independent claims 1 and 11 have now been revised to delete the recitation “adjusting flush power at least partly in dependence on a value representing hole depth” and replace it with the expression “adjusting flush power directly in dependence on a value representing hole depth” to more clearly define the nature of the method and system defined by independent claims 1 and 11. The deletion of the recitation “at least partly” from independent claims 1 and 11 addresses the Examiner’s concerns raised at page 5, paragraph 8 of the Official Action dated January 8, 2010, and more clearly distinguishes claims 1 and 11 over the Hobhouse patent applied to reject these claims in outstanding Official Action.

Applicant respectfully submits that independent claims 1 and 11 are not anticipated, taught, or suggested by the Hobhouse patent for the reasons discussed herein and during the telephone interview with Examiners Andrish and Neuder. More specifically, Hobhouse does

not teach or suggest a method or system in which flush power is adjusted directly in dependence on a value representing hole depth, and Hobhouse does not teach or suggest a method or system in which total power consumption of each sub-process is controlled. Thus, independent claims 1 and 11 positively recite two significant features which are not taught or suggested by the Hobhouse patent.

Applicant respectfully submits that independent claims 1 and 11 are in condition for allowance. The remaining dependent claims, which depend directly or indirectly from one of the two independent claims, are allowable, at least for the same reasons as their respective parent independent claims.

Applicant respectfully submits that this patent application is in condition for allowance, and favorable action is respectfully requested.

Enclosed is a Petition to extend the time for responding to the outstanding Official Action for three months, through and including July 8, 2010, and the required fee for the three month extension of time.

Respectfully submitted,



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